Case Reports

INTRACRANIAL DERMOID CYST

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Among the innumerable developmental anomalies and defects which are perhaps the heritage of some of our inbred races, there are none so rare in medical annals as intracranial dermoids. The English literature is singularly lacking in case records of this unusual condition. Cushing reports only one case in all his vast experience in neurological surgery. Such defects may only be diagnosed at autopsy.

Case A. S.—A Galician farmer, thirty-three years of age, was admitted to the Winnipeg General Hospital on May 6, 1924. At that time he complained of dizziness, blurred vision, weakness and muscular twitching of the left arm and leg.

Two years before admission he noticed that his left arm was weaker than the right, and that he was unable to control the movements of his left leg perfectly. This inco-ordination was associated with a sudden flexion of the knee and elbow joints on weight bearing.

The muscular twitching of the left eyelid, arm and leg was aggravated by exposure to cold. There was no history of persistent headache or vomiting. Neurological examination disclosed a normal pupillary response, a lateral sustained nystagmus and an occasional fibrillary twitching of the left eyelid. There was an exaggerated left knee jerk and a doubtful plantar flexion. Romberg's test revealed a slight tendency to fall to the left. There was some inco-ordination of the movements of the left arm and left leg. Ophthalmoscopic examination showed a well advanced secondary optic atrophy on admission. The urine, blood, and cerebro-spinal fluid were normal. A clinical diagnosis of cerebellar tumour having been made, operation was performed, but beyond an increase in intracranial tension the findings were negative. Post operative dural defect provided an outlet for the increased pressure and the man lingered on for a year with frequent tappings of the meningocoele.

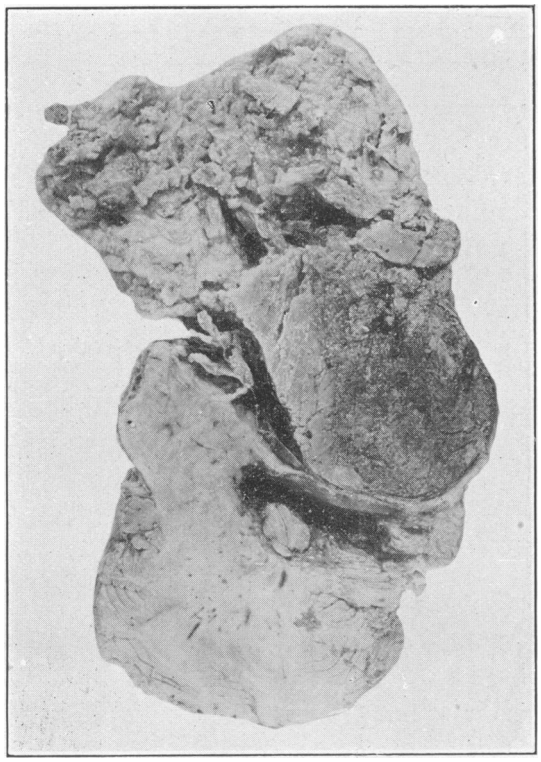
Post Mortem Examination.—At autopsy there was nothing of gross or microscopic interest in the chest or abdomen except a peculiar developmental defect of the right kidney which possessed two ureters. A circular gap was found in the floor of the posterior cranial fossa of the right side. Through this protruded a large soft spherical mass about the size of a grape fruit. This arose from outside the brain substance and pressed upon the cerebellum. There was a tremendous depression upon the inferior surface of the temporal lobe. The mass measured 11 x 7 x 5 cm., possessed a capsule, and on section the contents were found to be similar to those of a dermoid cyst, namely, a soft buttery mass containing many hairs, but no other organized structures. This substance contained no cholesterin. The point of attachment of the tumour to the dura was not demonstrated.

Discussion.—Dermoid cysts of the type described above are known as inclusion dermoids in order to distinguish them from similar tumours confined to the genital glands. Of the inclusion variety we may speak of the implantation dermoid and the congenital dermoid. The implantation dermoid is the result of forcible inclusion of ectodermal cells following trauma and is of minor importance. Congenital or sequestration dermoids occur chiefly in the midline and are the result of accidental inclusion of ectodermal cells in the course of development. Such tumours occur in the skull along the line of the tentorium cerebelli, the thyro-glossal duct or the tract from the pharynx to the pituitary body.

They may arise in one of three ways. Firstly, by elevation of the ectoderm and its consequent spread over an excess of mesoderm. This type is rare. Secondly, by depression of the ectoderm and its retention in a recess or sinus. Finally the ectoderm may be completely included, producing a cyst. Several authors mention the association of inclusion dermoids with other developmental anomalies along the course of Sutton's line of concrescence. This line begins

behind the occipital protruberance, descends the middle of the back to the coccyx where it turns forward along the perineum following the raphæ of the scrotum and penis in the male, then ascends the front of the abdomen and thorax to terminate at the middle of the margin of the lower lip.

Lannelongue in a series of thirty-one congenital tumours of the head and face found only one true intracranial dermoid. He believes that they are due to the persistence of a cranio-



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The soft buttery mass may be seen pressing upon the lobe of the cerebellum.

pharyngeal prolongation of the primitive intestine which gives rise to the hypophysis cerebri.

Bostroem describes eighteen cases of intracranial dermoids all connected with the dura or pia mater. The dural types of tumour occur in the mid line and are often connected with the skin by an epithelial canal. This epithelial canal is frequently a prolongation of the cyst wall which blends with the dura mater and penetrates the bone. This in turn connects with a fibrous cord derived from the scalp. A remarkable clinical feature in some cases is the absence of hair over the site of the growth.

There is a striking similarity between these inclusion dermoids and those of ovarian origin. Not only are they both lined by epithelium but they also possess in common sebaceous glands, which account for their soft buttery contents. The chief differentiating points morphologically may be found in the site of origin and in the variation in the complexity of the contents. While the inclusion dermoid is filled with sebaceous material and hairs, the ovarian type tends to produce more highly specialized structures such as teeth, bone, muscle, or even the rudiments of an eye.

In the case described we are undoubtedly dealing with a congenital inclusion of the ectoderm in the region of the tentorium cerebelli. These aberrant epithelial cells have lain dormant for many years, just as do the adrenal rests which give rise to hypernephromata. Finally some unknown stimulus has aroused these latent sebaceous glands resulting in an intracranial tumour of remarkable size.

Conclusion.—A congenital inclusion dermoid of the cranium has been described. This anomaly was associated with a double ureter. I am much indebted to Professor William Boyd for permission to publish this case.

REFERENCES

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SPONTANEOUS PNEUMOPERITONEUM

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The object of reporting the following cases is to call attention to a method by which the x-ray can sometimes give useful and almost certain diagnostic information in that ever alluring clinical entity, the "Acute Abdomen."

The method referred to is the radiographic demonstration of "spontaneous pneumoperitoneum," or free gas in the general peritoneal cavity. It was used as early as 1916 by an Italian army surgeon in cases of gunshot wounds of